Earth Science Information for Protecting Public Health

USGS
science for a changing world

The U.S. Geological Survey (USGS), the nation's largest water, earth, and biological science and civilian mapping agency, provides reliable, impartial scientific information to describe and understand the earth. The vast earth and biological data holdings of the USGS and its natural science expertise in biology, geology, hydrology, and geography make it an effective partner in enhancing knowledge and understanding of natural resource conditions, issues, and problems. The USGS has a long history of studying the occurrence, transport, and fate of natural and man-made chemicals in the environment and their effects on ecological systems and wildlife. Through partnerships and collaborative efforts with traditional public health agencies, the USGS is providing the basic earth science information and understanding needed to help society address public health concerns.

Currently the NIEHS has a number of useful collaborations with the USGS. In the area of breast cancer, for example, the NIEHS and the National Cancer Institute are using USGS databases to model historical exposures to pesticides and polychlorinated biphenyls (PCBs) to determine their possible influence on increased breast cancer incidence in Long Island, New York. NIEHS grantees, particularly those funded under the Superfund Basic Research Program, have used USGS databases in exploring the distribution, migration, and ultimate consequences of common toxicants such as arsenic, lead, and PCBs. For example, one Superfund grantee at the Mount Sinai School of Medicine is collaborating with the USGS on the multiagency Hudson River Estuary Project. Elsewhere, Dartmouth University is involved in the development and support of the New Hampshire Arsenic Consortium, which brings together university scientists, the New Hampshire Departments of Environmental Services and Health and Human Services, and the USGS. This collaboration has increased communication among the agencies, and has resulted in the design and undertaking of interagency projects to collect data to support risk assessments.

USGS expertise in biology, microbiology, wildlife health, ecology, geology, hydrology, geography, remote sensing, and geographic information systems offers great potential to the NIEHS mission. Of particular value is the fact that the USGS can provide data that are consistent over large spatial and temporal scales. Retrospectively recreating exposures, which the institute is often called upon to do, is made infinitely easier by the data, analysis, and expertise available at the USGS. A list of USGS databases related to public health issues can be found online at http://www.usgs.gov/themes/environment_human_health.html.

The USGS offers a number of strong resources for the biomedical research community, the need for which will increase as we move into an era of multidisciplinary research where numerous scientific fields must be brought to bear on environmental health issues.

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